Thus, both remaining rejections rely on combinations of Green et al. with other references. These now grounds of rejection were presented in response to the previous Amendment, which distinguished the same references without the teaching of Green et al. combined therewith. It is respectfully submitted that one skilled in the art would not combine the teaching of Green et al. with the other references and, in fact, the new combinations of the references are not proper.

The processes of Klungness et al. and Doelle each rely upon the precipitation of $CaCo_3$ using reactions between $CaOH_2$ and/or CaO and CO_2 or CO. The precipitation reactions are fundamental to the processes disclosed in each. To substitute a direct addition of $CaCo_3$ in the process of either Klungness et al. or Doelle substantially alters the principal of operation in those processes.

Klungness et al. teaches a process that combines calcium oxide or calcium hydroxide with dewatered crumb pulp. It is fundamental to the process of Klungness et al. that the material being treated is not a slurry, and that the process starts with calcium oxide or calcium hydroxide. As noted in column 5, lines 27-32, pulps used in the Klungness et al. process are characterized by an appearance of not being wet. While substantial moisture is present, the moisture is contained within the cell wall and the interior central cavity or lumen of the fiber. Calcium oxide reacts vigorously with water to produce calcium hydroxide. Since little or no surface moisture or free-moisture is present in the fiber mass this reaction occurs with the water in the cell walls or lumen. During the first mixing step of Klungness et al., the crumb pulp is mixed with either calcium oxide or calcium hydroxide, and the calcium hydroxide is drawn into the cell walls and hollow interiors of the cell fibers (column 6, lines 8-37). Carbon dioxide is then added to cause precipitation of calcium carbonate directly in the cellulose fibers. It is fundamental to the process

Received from < 260 897 9300 > at 11/21/02 4:11:01 PM [Eastern Standard Time]

of Klungness et al. that the fibers first be loaded with calcium oxide or calcium hydroxide, and that the precipitation of calcium carbonate occurs directly within the fibers. To incorporate the teachings of Green, et al., as suggested by the Examiner, would eliminate direct precipitation of calcium carbonate, which is the very essence of the Klungness, et al. process. Clearly one skilled in the art world would not be inclined to make such a fundamental change in the process of Klungness, et al.

In fact, Klungness et al. addresses the teaching of Green et al. and suggests the method is not useful in that it requires the use of substantially more particulate filler than can be loaded within the lumens of the fiber (column 3, lines 3-19). Thus, vigorous washing is required, which Klungness et al. attempts to eliminate. Clearly, Klungness et al. teaches, and specifically instructs one skilled in the art not to look at the process of Green et al.

Doelle also teaches a process in which calcium oxide or calcium hydroxide is mixed with a fiber suspension (column 3, lines 26-28). Carbon dioxide gas is added, and a precipitation reaction occurs in which the calcium hydroxide and carbon dioxide react to form calcium carbonate and water (column 3, lines 56-62). During the precipitation of calcium carbonate, the calcium carbonate is "effectively loaded into the lumen and grown as crystals on the fiber walls of a substantial portion of the fibers within the fiber suspension" (column 3, lines 53-56). By controlling process parameters such as pH, temperature, pressure, reaction time, lime slaking temperature, and lime average particle size different types of calcium carbonate crystals can be grown (column 3, line 63 through column 4, line 14). By using the process of Doelle rhombohedral, scalenohederal, aciculares, aragonite and substantially spherical shaped crystals can be formed (column 4, lines 15-20). The process by which different crystals can be grown, by

Received from < 260 897 9300 > at 11/21/02 4:11:01 PM [Eastern Standard Time]

controlling the parameters of the precipitation reaction are further discussed in Doelle. The precipitation of calcium carbonate is fundamental to the process of Doelle. Without that reaction, the process parameters to influence crystal growth are not available. Clearly one skilled in the art would not be inclined to eliminate the precipitation reaction.

It is clear that the precipitation reaction in which calcium carbonate is formed is fundamental to each of the processes of Klungness et al. and Doelle. Klungness et al. relies on first loading the cell fibers with one of the reactants so that the precipitation reaction occurs and calcium carbonate is formed in situ, directly within the cell walls or lumen. If, as suggested by the Examiner, calcium carbonate is substituted for the calcium oxide or calcium hydroxide in the Klungness et al. process, the in situ reaction and deposit of calcium carbonate does not occur. This is fundamentally contrary to the teaching of Klungness et al.

To eliminate the reaction in which calcium carbonate is precipitated eliminates the potential to control crystal formation as taught by Doelle. Thus, substituting calcium carbonate for the calcium oxide or calcium hydroxide of Doelle eliminates specifically that reaction which Doelle desires to control. Without the precipitation reaction, and the controlled precipitation of calcium carbonate, crystal structure control is not possible. Thus substituting calcium carbonate in the process of Doelle is a fundamental change to the process of Doelle.

Green et al. on the other hand teaches the use of existing filler particles such as fine pigment grades of calcium carbonate, alumina, silica and zinc sulfide. Clearly, Green et al. does not teach the precipitation of calcium carbonate in the presence of the fiber slurry. Since the process of Klungness et al. and Doelle specifically require and rely on performance of a calcium

Received from < 260 897 9300 > at 11/21/02 4:11:01 PM [Eastern Standard Time]

carbonate precipitation reaction the teaching of Green et al. is not properly combinable therewith, absent a clear unequivocal teaching thereof.

It is respectfully submitted that each Klungness et al. and Doelle relies on the precipitation reaction forming calcium carbonate as fundamental to the processes disclosed therein. Without first loading calcium oxide or calcium hydroxide into the fibers of Klungness et al. in situ precipitation of calcium carbonate is not possible, and in situ precipitation of calcium carbonate is precisely the effect that Klungness et al. desires to achieve. Without precipitating calcium carbonate in the process of Doelle, it is not possible to control crystal formation in the manner taught by Doelle, and crystalline structure control is precisely the effect which Doelle desires to achieve. Thus, it is respectfully submitted that one skilled in the art would clearly not substitute calcium carbonate into the process of Klungness et al. or the process of Doelle, since the processes and goals of each Klungness et al. and Doelle is destroyed by the elimination of the precipitation reaction forming calcium carbonate.

For these reasons, it is respectfully submitted that the combinations of references in the two rejections contained in the final Office Action are not sound, and the rejections should be withdrawn and the claims allowed.

The underlying combinations and rejections, without the teaching of Green et al. were distinguished from the amended claims in the last Amendment, as indicated by the Examiners own admission that the previous Amendment "necessitated" the new combinations with Green, et al. Since the combinations with Green, et al. are not proper for the reasons stated above, the claims should now be allowable without further amendment.

Received from < 260 897 9300 > at 11/21/02 4:11:01 PM [Eastern Standard Time]

PATENT
Reply under 37 CFR 1.116
EXPEDITED PROCEDURE
Group 1731

For the foregoing reasons, Applicants submit that no combination of the cited references teaches, discloses or suggests the subject matter of the amended claims. The pending claims are therefore in condition for allowance, and Applicants respectfully request withdrawal of all rejections and allowance of the claims.

In the event Applicants have overlooked the need for an extension of time, an additional extension of time, payment of fee, or additional payment of fee, Applicants hereby conditionally petition therefor and authorizes that any charges be made to Deposit Account No. 20-0095, TAYLOR & AUST, P.C.

Should any question concerning any of the foregoing arise, the Examiner is invited to telephone the undersigned at (260) 897-3400.

Respectfully submitted,

Raymond W. Campbell
Registration No. 29,902

Attorney for Applicant

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being transmitted via facsimile to the U.S. Patent and Trademark Office, on: November 21, 2002.

Raymond W. Campbell, Reg. No. 29,902
Name of Registered Representative

Signature

November 21, 2002
Date

RWC/aj

TAYLOR & AUST, P.C.
142 S. Main Street
P.O. Box 560
Avilla, IN 46710
Telephone: 260-897-3400
Facsimile: 260-897-9300

Enc.: Return postcard

VOI0189.US

Received from < 260 897 9300 > at 11/21/02 4:11:01 PM [Eastern Standard Time]